EEB Branch File
099101

DP Barcode : D189392
PC Code No : 099101
EEB Out : JUN 17 1993

To: SUSAN LEWIS
Product Manager 21
Registration Division (H7505C)

From: Anthony F. Maciorowski, Chief
Ecological Effects Branch/EFED (H7507C)

Attached, please find the EEB review of...

Reg./File # : 284523
Chemical Name : BENOMYL
Type Product : FUNGICIDE
Product Name :
Company Name : DUPONT
Purpose : REVIEW RESIDUE CHEMISTRY ANALYSIS RESULTS TO DETERMINE IF CONTAMINANTS FOUND IN BENOMYL COULD HAVE CAUSED THE PHYTO-TOXICITY INCIDENTS
Action Code : 405 Date Due : 6-15-93
Reviewer : RICK PETRIE Date In EEB: 3-24-93

EEB Guideline/MRID Summary Table: The review in this package contains an evaluation of the following:

GDLN NO	MRID NO	CAT	GDLN NO	MRID NO	CAT	GDLN NO	MRID NO	CAT
71-1(A)			72-2(A)			72-7(A)		
71-1(B)			72-2(B)			72-7(B)		
71-2(A)			72-3(A)			122-1(A)		
71-2(B)			72-3(B)			122-1(B)		
71-3			72-3(C)			122-2		
71-4(A)			72-3(D)			123-1(A)		
71-4(B)			72-3(E)			123-1(B)		
71-5(A)			72-3(F)			123-2		
71-5(B)			72-4(A)			124-1		
72-1(A)			72-4(B)			124-2		
72-1(B)			72-5			141-1		
72-1(C)			72-6			141-2		
72-1(D)			OTHER	42688501 42688601 42687901		141-5		

Y=Acceptable (Study satisfied Guideline)/Concur
P=Partial (Study partially fulfilled Guideline but additional information is needed
S=Supplemental (Study provided useful information but Guideline was not satisfied)
N=Unacceptable (Study was rejected)/Nonconcur

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUN 17 1993

D189392

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Review Of EPA Regional Enforcement Reports For Benomyl DF Fungicide To Identify Potential Phytotoxicants

FROM: Anthony F. Maciorowski, Chief
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)

TO: Susan Lewis, PM-21
Fungicide/Herbicide Branch
Registration Division (H7505C)

The Ecological Effects Branch (EEB) has reviewed the residue chemistry analysis data from EPA Regions. These documents contain the laboratory results of benomyl DF samples analyzed by the EPA Compliance Division for misbranding/adulteration. Two contaminants, atrazine and chlorothalonil, were found in a number of samples. Concentrations ranged from 1.0 to 63 ppm for atrazine and from 26.0 to 93.0 ppm for chlorothalonil.

Atrazine is an herbicide that can potentially result in phytotoxic effects when applied to plants or soil. These atrazine concentrations are expected to adversely affect annual plants sensitive to atrazine, but are not expected to cause significant injury to woody plants to the extent that occurred in many of the benomyl incidents.

Chlorothalonil is primarily used as a fungicide, however, EEB files contain reviews (registration status unknown) for red algae control in citrus, algae control in well drilling muds, and in anti-fouling paints for boat bottoms. The EEB chlorothalonil file contains no 6(a)(2) phytotoxicity reports, or other references to target or nontarget phytotoxicity in the field. Based on Tier I nontarget plant phytotoxicity seed germination and seedling emergence data in EEB files, chlorothalonil did not cause >25% reduction in growth or adverse phytotoxicity to all 10 test species; soybeans, buckwheat, mustard, tomato, cucumber, radish,

corn, oat, sorghum, or onion, when applied to the soil at the maximum label application rate of 16 pounds active ingredient per acre. We have no chlorothalonil or chlorothalonil tank mix nontarget plant data for application directly to plant foliage. Of the documents provided for review, the "Summary Report On Fuzzel Nursery" prepared by David McCarley on March,1, 1991 states on page 61 that according to Mr. Fuzzel (the nursery owner), Dr. Wayne Curry (title unknown), and Larry Taylor (title unknown), Daconil (chlorothalonil) will cause phytotoxic reactions if used in soil matrices to treat plants.

A quick review of chlorothalonil labels was conducted. Six registered labels (Bravo 500 - 50534-8; Bravo 720 - 50534-188; Bravo 90DF - 50534-157; and Daconil 2787 - 50534-9, 50534-4, 50534-195) state "Do not combine Bravo/Daconil with Dipel 4L, Triton B - 1956, or Triton AG - 98 as phytotoxicity may result from the combination when applied to some crops on the label". Dipel is a biological insecticide (Bacillus thuringiensis) and the Triton products are adjuvants (no pesticidal properties). It appears that the potential for chlorothalonil phytotoxicity exists when it is used in combination the these chemicals.

If you have any questions regarding this review, please direct them to Richard Petrie, 305-7358, 1030L.